WHAT IS CLAIMED IS:

1. A resonant element comprising:

a vibrating body vibratable in orthogonal X- and Z-directions;

exciting means for causing said vibrating body to be subjected to an excitation vibration in the X-direction;

excitation deflection detecting means for detecting any deflection of said vibrating body in the Z-direction during the excitation vibration thereof in the X-direction; and

excitation deflection inhibiting means for inhibiting the deflection of said vibrating body in the Z-direction.

2. A resonant element as claimed in claim 1, wherein:

said resonant element constitutes an angular velocity sensor for detecting the angular velocity around a Y-axis orthogonal to said X- and Z directions based on vibration of said vibrating body in the Z-direction by a Coriolis force; and

said excitation deflection means also serve as Z-direction vibration detecting means for detecting vibration of said body in the Z-direction.

3. A resonant element as claimed in claim 1 or 2, wherein:

said excitation deflection detecting means is constituted of a detecting electrode for detecting variation in an electrostatic capacity with respect to said vibrating body in response to a vibration or deflection thereof in the Z-direction.

4. A resonant element as claimed in claim 1 or 2, wherein:

said vibrating body is disposed so as to be opposed to a plane in the X-Y directions of a fixed substrate; and

said vibrating body constitutes a planar vibrating body supported by said fixed substrate via support beams so as to be vibratable in the X-direction.

5. A resonant element as claimed in claim 3, wherein:

said vibrating body is disposed so as to be opposed to a plane in the X-Y directions of a fixed substrate; and

said vibrating body constitutes a planar vibrating body supported by said fixed substrate via support beams so as to be vibratable in the X-direction.

6. A resonant body, as claimed in claim 5, wherein said vibrating body is electrically conductive and said excitation deflection detecting means comprises a detecting electrode spaced from said vibrating body such that an electrostatic capacitance is developed between said vibrating body and said electrode.

7. A resonant body, as claimed in claim 6, wherein said vibrating body is disposed above said fixed substrate and said detection electrode is disposed on a surface of said fixed substrate below said vibrating body.

8. A resonant body, as claimed in claim 6, wherein said vibrating body is disposed above said fixed substrate and said detection electrode is disposed in a cavity in said fixed substrate below said vibrating body.

9. An angular velocity sensor comprising:

a vibrating body vibratable in orthogonal X- and Z-directions;

exciting means for causing said vibrating body to be subjected to an excitation vibration in the X-direction;

excitation deflection detecting means for detecting any deflection of said vibrating body in the Z-direction during the excitation vibration thereof in the X-

direction, said excitation deflection detecting means including a detecting electrode for detecting variation in an electrostatic capacity with respect to said vibrating body in response to a deflection thereof in the Z-direction;

excitation deflection inhibiting means for inhibiting the deflection of said vibrating body in the Z-direction; and

capacity-voltage converting means for converting the variation in the electrostatic capacity by said detecting electrode into a voltage.

10. An angular velocity detector, as claimed in claim 9, wherein said vibrating body is rotatable about the Y-axis orthogonal to said X- and Z-directions to thereby impart an angular velocity to said vibrating body which causes said body to vibrate in the Z-direction due to a Coriolis force and said excitation deflection detection means also serves as Z-direction vibration detecting means for detecting the vibration of said vibrating body in the Z-direction.

11. An angular velocity detector, as claimed in claim 9, wherein said capacity-voltage converting means comprises an FET.

12. A method for adjusting the vibration of a resonant element comprising the steps of:

providing a resonant element including a vibrating body vibratable in orthogonal X- and Z-directions, exciting means for causing said vibrating body to be subjected to an excitation vibration in an X-direction, a detecting electrode for detecting the variation in an electrostatic capacity with respect to said vibrating body in response to the deflection thereof in the Z-direction, and excitation deflection inhibiting means which provides electrostatic attractive forces to said vibrating body and which inhibits the deflection of said vibrating body in a Z-direction during the excitation vibration thereof in the X-direction;

detecting the variation in the detected electrostatic capacity by said detecting electrode as a deflection of said vibrating body in the Z-direction while the vibrating body is caused to be subjected to an excitation vibration in the X-direction by said exciting means; and

controlling said electrostatic attractive forces provided to said vibrating body by said excitation deflection inhibiting means in a direction such that the variation in the detected electrostatic capacity by said detecting electrode is canceled.

13. A method for adjusting the vibration of a resonant element as claimed in claim 12, further including:

converting the detected electrostatic capacity by said detecting electrode into a voltage; and

detecting deflection of said vibrating body in the Z-direction during the excitation vibration thereof in the X-direction by detecting said voltage.

14. A method for adjusting the vibration of a resonant element as claimed in claim 13, wherein:

the detected electrostatic capacity by said detecting electrode is converted into a voltage using capacity-voltage converting means comprising an FET.

15. A method for adjusting the vibration of a resonant element in an angular velocity sensor and then determining angular velocity, comprising:

providing a resonant element including a vibrating body vibratable in orthogonal X- and Z-directions, exciting means for causing said vibrating body to be subjected to an excitation vibration in an X-direction, a detecting electrode for detecting the variation in an electrostatic capacity with respect to said vibrating body in response to deflection or vibration thereof in the Z-direction, excitation deflection inhibiting means which provide electrostatic attractive forces to said vibrating body and which inhibit the

deflection of said vibrating body in a Z-direction during the excitation vibration thereof in the X-direction and capacity-voltage converting means for converting the detected electrostatic capacity by said detecting electrode into a voltage;

detecting a first variation in the detected electrostatic capacity by said detecting electrode caused by a deflection of said vibrating body in the Z-direction while the vibrating body is caused to be subjected to an excitation vibration in the X-direction by said exciting means;

controlling said electrostatic attractive forces provided to said vibrating body by said excitation deflection inhibiting means in a direction such that the variation in the first detected electrostatic capacity by said detecting electrode is canceled;

applying an angular velocity to said resonant element about a Y-axis orthogonal to said X- and Z- directions to cause said resonant body to vibrate in the Z-direction due to a Coriolis force;

detecting vibration of said vibrating body in the Z-direction due to said Coriolis force utilizing a second variation in the electrostatic capacity detected by said detecting electrode; and

converting said second variation in electrostatic capacity into a voltage using said capacity-voltage converting means, said voltage being representative of said angular velocity.